



SEQUENCE LISTING

<110> Donovan, Stephen

<120> CLOSTRIDIAL TOXIN DERIVATIVES AND METHODS FOR TREATING PAIN

<130> botulinum-subP/pain/D2875

<140> 09/489,667

<141> 2000-01-19

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<170> PatentIn Ver. 2.1

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<213> Unknown Organism

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<221> MOD\_RES

<222> (11)

<223> AMIDATION

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<223> Description of Unknown Organism: This fragment is substance P and is very well known in the art.

<220>

<223> The Met at position 11 is Met-amide.

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<310> 5891842

<311> 1996-04-12

<312> 1999-04-06

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Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met

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<213> Unknown Organism

<220>  
<223> Description of Unknown Organism: Precursor to substance P, which is very well known in the art.

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<311> 1996-04-12  
<312> 1999-04-06

<300>  
<301> Shimonka,  
et al.,  
<303> J. Neurochem.  
<304> 59  
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<307> 1992

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<220>  
<223> Description of Unknown Organism: This fragment is a precursor to substance P and is very well known in the art.

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<310> 5891842  
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<301> Shimonka,

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<303> J. Neurochem.

<304> 59

<306> 81-92

<307> 1992

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Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys

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<210> 4

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<213> Unknown Organism

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<223> Description of Unknown Organism: This fragment is a precursor to substance P and is very well known in the art.

<300>

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<311> 1996-04-12

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<303> J. Neurochem.

<304> 59

<306> 81-92

<307> 1992

<400> 4

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys Arg

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5

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<210> 5

<211> 12

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<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: This fragment  
is a carboxy-ester synthetic precursor to  
substance P.

<220>

<223> The Gly at the carboxy terminal (Gly at position  
12) is methylated.

<300>

<310> 5891842

<311> 1996-04-12

<312> 1999-04-06

<300>

<301> Lee,  
et al.,

<303> Eur. J. Biochem.

<304> 114

<306> 315-327

<307> 1981

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<301> Pernow, B.

<303> Pharmacol. Rev.

<304> 35

<306> 86-138

<307> 1983

<300>

<301> Regoli,  
et al.,

<303> TIPS

<304> 9

<306> 290-295

<307> 1988

<400> 5

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly

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5

10

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<223> Description of Artificial Sequence: This is a carboxy ester synthetic precursor to substance P.

<220>  
<223> The Lys at the carboxy-terminus (Lys at position 13) is methylated.

<300>  
<310> 5891842  
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<301> Lee,  
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<306> 315-327  
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<306> 86-138  
<307> 1983

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<303> TIPS  
<304> 9  
<306> 290-295  
<307> 1988

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Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys

1            5            10

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<220>  
<223> Description of Artificial Sequence:This is a carboxy ester synthetic precursor to substance P.

<220>  
<223> The Arg at the carboxy-terminus (Arg at position 14) is methylated.

<300>  
<310> 5891842  
<311> 1996-04-12  
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<301> Lee,  
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<306> 315-327  
<307> 1981

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<301> Pernow, B.  
<303> Pharmacol. Rev.  
<304> 35  
<306> 86-138  
<307> 1983

<300>  
<301> Regoli,  
      et al.,  
<303> TIPS  
<304> 9  
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<307> 1988

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Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys Arg  
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<210> 8

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<212> PRT

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<223> Description of Artificial Sequence: This is a carboxy ester synthetic precursor to substance P.

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<223> The Gly at the carboxy terminal (Gly at position 12) is ethylated.

<300>

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<303> Eur. J. Biochem.

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<306> 315-327

<307> 1981

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<303> Pharmacol. Rev.

<304> 35

<306> 86-138

<307> 1983

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<301> Regoli,  
et al.,

<303> TIPS

<304> 9

<306> 290-295

<307> 1988

<400> 8

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly

1 5 10

<210> 9

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: This is a carboxy ester synthetic precursor to substance P.

<220>

<223> The Lys at the carboxy terminal (Lys at position 13) is ethylated.

<300>

<310> 5891842

<311> 1996-04-12

<312> 1999-04-06

<300>

<301> Lee,  
et al.,

<303> Eur. J. Biochem.

<304> 114

<306> 315-327

<307> 1981

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<303> Pharmacol. Rev.

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<301> Regoli,

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<306> 290-295  
<307> 1988

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Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys  
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<210> 10  
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<213> Artificial Sequence

<220>  
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<220>  
<223> The Arg at the carboxy terminal (Arg at position 14) is ethylated.

<300>  
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<311> 1996-04-12  
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<303> Pharmacol. Rev.  
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<303> TIPS

<304> 9

<306> 290-295

<307> 1988

<400> 10

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys Arg

1 5 10

<210> 11

<211> 4

<212> PRT

<213> Unknown Organism

<220>

<223> This sequence is made up by the first four amino acids of substance P.

<220>

<223> Description of Unknown Organism: This is a naturally occurring amino terminal peptide fragment derived from substance P.

<300>

<310> 5891842

<311> 1996-04-12

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<301> Stewart,  
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<303> Nature

<304> 262

<306> 784-785

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<301> Skilling,  
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<304> 10  
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Arg Pro Lys Pro  
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<210> 12  
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<212> PRT  
<213> Unknown Organism

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<223> Description of Unknown Organism: This is a naturally occurring amino terminal peptide fragment derived from substance P.

<220>  
<223> This fragment is made up of the first seven amino acids of substance P.

<300>  
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<300>  
<301> Stewart,  
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<300>  
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et al.,  
<303> J. Neurosci.  
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<307> 1990

<300>

<301> Lavielle,  
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<304> 37

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<307> 1988

<400> 12

Arg Pro Lys Pro Gln Gln Phe

1 5

<210> 13

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<212> PRT

<213> Unknown Organism

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<223> Description of Unknown Organism: This is a  
naturally occurring amino terminal peptide fragment  
derived from substance P.

<220>

<223> This fragment is made up of the first nine amino  
acids of substance P.

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<310> 5891842

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<304> 262

<306> 784-785

<307> 1986

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<301> Skilling,  
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<303> J. Neurosci.  
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<306> 309-1318  
<307> 1990

<400> 13  
Arg Pro Lys Pro Gln Gln Phe Phe Gly  
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<210> 14  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: This is an  
analog of substance P. This analog contains  
disulfide Cys-Cys bridges.

<220>  
<223> The Cys at position 3 bridges with the Cys at  
position 6.

<220>  
<221> MOD\_RES  
<222> (11)  
<223> AMIDATION

<220>  
<223> The Met at position 11 is Met-amide.

<300>  
<310> 5891842  
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<300>  
<301> Lavielle,  
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<303> Biochem. Pharmacol.

<304> 37  
<306> 41-  
<307> 1988

<300>  
<301> Quirion, R.  
    Dam, T.V.  
<303> Regulatory Peptides  
<304> 22  
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<307> 1988

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